

MANVI GUPTA

B22 Gaurikund Hostel, IIT Mandi - North Campus, H.P. 175005 (India)

✉ manvigupta98@gmail.com • ☎ +91 75800 78791 • 🌐 Manvi07 • in manvi-gupta98 • 🌐 manvi07.github.io

EDUCATION

RWTH Aachen University, Germany

October 2019 - February 2020

RWTH Exchange Worldwide

Indian Institute of Technology(IIT) Mandi

August 2017 - Present

Bachelor of Technology, Final year

CGPA: 9.10/10

Computer Science & Engineering

TECHNICAL STRENGTHS

Computer Languages	C, C++, Python, Java, Scheme(Lisp)
Software & Tools	Git, Redmine, CMPL, Gurobi, Kubernetes
Web Technologies	HTML, CSS, Flask, PHP
Machine Learning	Keras, Tensorflow, SciKit-Learn, MLflow
Familiar Technologies	PHP, MySQL, Hadoop, OpenCV, OpenMP

PROJECTS

MUTUAL INFORMATION ESTIMATION IN DNNs

September 2020 - Present

Major Technical Project

Dr. Samar Agnihotri

- **Task:** Currently working on implementing the Ensemble Dependency Graph Estimator (EDGE) for Scalable Mutual Information Estimation, and comparing the results with other estimators.
- **Goals:** To have a generalized algorithm to estimate the mutual information across hidden layers in a Deep Neural Network, irrespective of the model used.

CALL TREE REVERSAL

October 2019 - Present

Using Mixed Integer Programming

Prof. Dr. Uwe Naumann

- **Task:** Extending the existing Mixed Integer Programming (MIP) formulation of Call Tree Reversal with result checkpointing and parallel computation using GUROBI optimizer.
- **Use case:** Debugging (in high-performance scientific computing in particular), Adjoint Model computation in Algorithmic Differentiation
- **Challenges Involved:** Combinatorics knowledge for verifying CTR results

CIF VALIDATOR WITH REST API

April 2019 - June 2019

A real world tool to validate Crystallographic Information Files (CIF)

Dr. Arti Kashyap

- **Task:** Worked in a team of 3 to make a functional RESTful API for validating CIF files.
- CIF File is parsed using PyCODCIF and the frontend is built upon Barebone framework.
- **Collaboration:** In collaboration with the material science group at EPFL Switzerland. The tool is to be integrated on materialscloud.org.

ADHD DISEASE DETECTION

January 2019 - February 2019

Deep Learning

Dr. Aditya Nigam

- Implemented a Neural Network model to classify **fMRI images** into 10 different components of human brain & find the correlation coefficients.
- **Challenges faced:** Small Data Set & limited knowledge of brain anatomy
- **Technologies Used:** Keras, Tensorflow

WORK & TEACHING EXPERIENCE

Product Internship - Adobe India Systems Private Limited

May 2020 - July 2020

Built a Machine Learning pipeline on a distributed Kubernetes Platform & developed a POC for MLflow & Kubeflow capabilities.

Received *Pre-Placement Offer* for full time role as Member of Technical Staff based on excellent performance during the internship.

Undergraduate Teaching Assistant - Info. & Database Systems

Feb. 2020 - Sept. 2020

Undergraduate Teaching Assistant - Data Science III

September 2020 - Present

RELEVANT COURSEWORK

Mathematical Foundation of Computer Science
Information and Database Systems
Advanced Data Structures and Algorithms
Computer Organization
SAT & SMT Solvers

Machine Learning
MapReduce and Big Data
Satisfiability Checking
High Performance Computing
Compiler Design

ACADEMIC ACHIEVEMENTS

- 2nd position in Batch of 2017 for Semester III with SGPA 9.0/10
- Selected for *RWTH Exchange Worldwide Scholarship* based on highest CGPA.
- Winner of *Hacking the Google Maps*, online competition by Heuristics IIT Mandi.
- Selected for ACM India Summer School 2019 on Cyber Security and Data Analytics.
- First, among the 7 teams from the college in Flipkart GRiD Machine Learning challenge.
- Ranked in All-India Top 1% (amongst 11,86,000 candidates) in JEE Mains 2017 and Top 2.8% (amongst 1,59,540 candidates) in IIT-JEE Advanced 2017
- Qualified National Talent Search Examination(NTSE) 2015 stage 1.
- Zonal Rank 2 in Mathematics in FIITJEE Talent Reward Exam 2015.

POSITION OF RESPONSIBILITY

Founder Coordinator, ACM-W Chapter IIT Mandi

Chairperson, August 2019 - August 2020

- **Responsibilities:** To guide girl students about opportunities in the field of computing and connect the students to great women leaders of the world. Conducting sessions to motivate them and make them aware of all the upcoming and existing opportunities in their field.

EXTRA-CURRICULARS

- Runner up in STAC Hackweek-2018 held at IIT Mandi.
- Runner up in Hostel Day coding competition.
- Winner of Intra College Diwali Photography Competition 2017.
- Active member of WISE-Women in Science & Engineering IIT Mandi.
- Member of Literary Society & IEEE Student Chapter, IIT Mandi.
- Represented IIT Mandi at Inter IIT Cultural Meet 2017.